

**Case 3576*****Oscinella* Becker, 1909 (Insecta, Diptera, CHLOROPIDAE): proposed conservation by reversal of precedence with *Melanochaeta* Bezzi, 1906 and *Pachychaetina* Hendel, 1907**

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**Abstract.** The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used generic name *Oscinella* Becker, 1909 (CHLOROPIDAE). The name *Oscinella* is threatened by its senior subjective synonyms *Melanochaeta* Bezzi, 1906 and *Pachychaetina* Hendel, 1907. Strict application of the Code would result in the name *Oscinella frit* (Linnaeus, 1758), uniformly used for 'frit fly', one of the most serious pests of cereals in the Palaearctic, having to change its generic epithet. It is proposed that *Oscinella* be given precedence over *Melanochaeta* and its objective synonym *Pachychaetina* over *Oscinella* Becker, 1909 whenever these names are considered to be synonyms.

**Keywords.** Nomenclature; taxonomy; Insecta; Diptera; CHLOROPIDAE; *Oscinella*; *Melanochaeta*; *Pachychaeta*; *Pachychoeta*; *Pachychaetina*; *Lasiochaeta*; *Oscinella frit*; *Melanochaeta capreolus*; Holarctic; Oriental; Afrotropical; Neotropical; Australasian; Palaearctic; frit fly.

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1. Most agricultural handbooks on cereals deal with damage to cereals caused by the larvae of the 'frit fly'. It was first documented more than two thousand years ago. The damaged young caryopses (grain) of cereals, mainly barley and oats, were called 'frit' by the ancient Romans, although they were unaware that a dipterous larva was the cause: Varro (37 B.C., [exact dating discussed in Flad, 1996], capitulum xlvi) wrote: 'Illut [sic! correct illud] autem summa in spica jam matura, quod est minus quam granum, vocatur frit' [The part at the top of the full-grown ear, smaller than the grain, is called frit]. Linnaeus adopted this name when he first described the biology of 'Korn-Flugan' (Linnaeus, 1750, 1754) and later named it *Musca frit* in his *Systema Naturae* (Linnaeus, 1758, p. 598). Frit fly larvae destroy growing kernels of cereals predominantly at the top of the ear and kill the central shoots of young grasses, resulting in a plant with several stems, and damage to the ear. The result can be a total loss of the crop. An immense scientific and applied literature exists concerning this common agricultural pest of grain crops (including maize) and its management. Since the earliest times agricultural handbooks have dealt with this subject. In the CHLOROPIDAE database of the first author, 3,013 articles are included

with the key word 'frit'; 41 of these titles are unpublished dissertations up to a length of 232 pages (England 13, Germany 12; Russia 11, Czech Republic 1, Finland 1, Sweden 1, Switzerland 1, U.S.A. 1) and 1,045 articles contain in their title the word 'frit', or if not, the vernacular word-stems 'bzun'... (Czech), 'шведск'... (= 'shvedsk'..., 'švedsk'...) [Russian, Bulgarian, Serbo-Croatian], swedsk..., szwedsk..., ploniar... (Polish), or the complete words 'oscinie' (French), 'suedeze' (Romanian) or oat fly. During the last 50 years in three taxonomic articles 2, 1, and 2 new species of *Oscinella* were described, correspondingly (Cherian, 1977; Beschovski, 1978; Deeming, 2003). All these are still valid. The latest key for 15 out of 22 European *Oscinella* species was published by Beschovski (1985, p. 103). The three most recent applied articles on *O. frit* in the English language were published by El-Wakeil et al. (2009), Anonymous (2002) and Lindblad (2001). *O. frit* occurs in all six biogeographical regions (CHLOROPIDAE chapters in the Catalogues of Palaearctic, Nearctic, Neotropic, Afrotropical, Oriental and Australasian Regions, CABI, 2005). CABI (2005) published the newest world distribution map of this pest fly. Presumably it is the most abundant true fly (Brachycera s.l.) in temperate Europe (experience of 45 years Brachycera sorting of sweep net, trap and eclector samples by the first author; Johnson & Taylor, 1962; von Tschirnhaus, 1981). *Oscinella pusilla* (Meigen, 1830) auctt., *O. vastator* (Curtis, 1845) and *O. nartshukiana* Beschovski, 1978 are also *Oscinella* species known to be harmful to cereals. Worldwide the genus *Oscinella* comprises 3 subgenera: *Oscinella* s.s., *Paroscinella* Becker, 1913 and *Cyclocercula* Beschovski, 1978, and altogether 82 valid species, some of which may be transferred to other genera in the future. At least 284 nominal species-group taxa have been described in *Oscinella* or placed in it for a certain period.

2. Larvae and adults of *Oscinella* are very difficult to identify, to the genus level as well as to the species. As background for this application the definition of its type species *O. frit* is outlined by reference to selected literature: Drawings: the colour pattern of the fly's legs is variable and depends on the temperature regime under which the larvae developed (Le Berre, 1959; Le Berre & Chevin, 1962). Unpublished studies made by the first author in the course of a few days in the Alps demonstrate that, dependent on the altitude from 800 m up to 2,640 m a.s.l., the flies become darker and darker with increasing altitude, and the wings become shorter, wider and darker. Many other similar European species and their synonyms have been described mainly on the basis of colour differences of their legs. A thorough revision based on the male genitalia and on specimens reared from known host plants (species of POACEAE and CYPERACEAE) is still missing. Coaker (1952) was the first to study genitalia of *O. frit* in connection with the fly's external morphology. One plate (fig. 19) with figures of the male genitalia is missing in the original unpublished dissertation held at the University of London and Coaker himself does not have a copy of it (pers. comm. with the first author, 3.ii.1976). Different drawings of the male genitalia are available in Andersson (1977, p. 111), Beschovski (1985, p. 101; 1987, p. 43) and Nartshuk & von Tschirnhaus (submitted). The morphology of the larvae of *O. frit* or both these species was distinguished by Narchuk (1956), Nye (1958) and Hubicka & Buchalczyk (1962).

3. Becker proposed the generic name *Oscinella* Becker, 1909 for his new Afrotropical CHLOROPIDAE species, *O. deficiens*, currently assigned to *Conioscinella* Duda, 1929. As pointed out by Sabrosky (1973), Becker fulfilled the criteria for making the name

available. In his large monograph of Palaearctic CHLOROPIDAE Becker (1910) designated '*Oscinella frit* Linnaeus' as type species of *Oscinella*, a species not included in the original description (Becker, 1909). Thus, Sabrosky (1973) proposed the designation of *Musca frit* Linnaeus, 1758 as the type species of *Oscinella*, which was approved by the Commission in Opinion 1100 (BZN 34: 203–204, February 1978). Incidentally, a mistake occurred accompanying this designation: In the 'Original References' the correct year 1909 of Becker's proposal was combined with an erroneously cited article, namely Becker (1910, p. 29), published 15.iii.1910). We propose that the entry for the name *Oscinella* on the Official List of Generic Names in Zoology be amended to record that the correct reference for this genus is '**Becker, T. 1909. *Bulletin du Muséum National d'Histoire Naturelle (Paris)*, 15(3), p. 120**'.

4. *Musca frit* Linnaeus, 1758 since its description until its inclusion in *Oscinella* by Becker (1910) has been assigned to various genera: *Oscinis* Latreille, 1804, *Gaurax* Loew, 1863 and *Oscinisoma* Lioy, 1864 (the last is occasionally incorrectly spelled as *Oscinosoma*). Both the taxonomic and economic literature on the frit fly and its relatives followed Becker (1910), although some applied entomologists and authors of agricultural books have, for a variety of reasons, continued using the specific name *frit* in combination with the generic names *Oscinis*, *Oscinisoma* or '*Oscinosoma*'. At present the generic names *Gaurax* Loew, 1863 and *Oscinisoma* Lioy, 1864 are used as valid and are listed as such in all modern monographs on CHLOROPIDAE and the manuals on Diptera. The type species of *Oscinis* Latreille, 1804 is *Musca lineata* Fabricius, 1781, a junior primary homonym of *Musca lineata* Harris, 1776 (SYRPHIDAE). Since Becker's monograph (1910) *Oscinis* Latreille, 1804 is a junior synonym of *Chlorops* Meigen, 1803 (CHLOROPINAE), both having the same type species *Musca pumilionis* Bjerckander, 1778.

5. *Elachiptera aterrima* Strobl, 1880 (p. 34) is the type species of *Pachychoeta* Bezzi, 1895 (p. 72), by original designation. It was never doubted since its synonymisation by Collin (1911, p. 152) that *Oscinis capreolus* Haliday, 1838 (p. 187) is a senior synonym of *Elachiptera aterrima* Strobl, 1880. Morge (1974) mentioned that the male type specimen of *E. aterrima* in the Strobl Collection in Admont (Austria) was identified by John Ismay as *M. capreolus*. Later (Morge, 1984, p. 317) an exact figure of the type specimen of *M. capreolus* was published.

6. In order to clarify the status of *Melanochaeta* Bezzi, 1906 (p. 50) its nomenclatural history is outlined. Bezzi (1895) used *Pachychoeta* as a subgenus of *Crassiseta* von Roser, 1840, intentionally using a name earlier proposed by Loew (1845) as *Pachychaeta* [proposed by Loew (1845) in synonymy with *Crassiseta* Roser, 1840 but made available by Bezzi's use of it as the valid name of a taxon], but with the spelling *Pachychoeta*. As there is no indication in Bezzi (1895) of an intentional change, *Pachychoeta* cannot be an unjustified emendation. Bezzi later (1906: 50) used Loew's original spelling *Pachychaeta* [linguistically correct, from Doric Greek: chaíta = bristle]. Bezzi's (1906) first two sentences and the last one are [translated from German]: '*Melanochaeta* nov. nom. for *Pachychaeta* Bezzi 1895 (Fam. *Chloropidae*, typ. *Elachiptera aterrima* Strobl) nec Loew 1845 (Dipt.). When I founded this new subgenus of *Crassiseta* I used the name of Loew in order to prevent the creation of a new one . . . in any case for my genus a new name must be used'. However, *Melanochaeta* is not a new replacement name because the name it is stated to replace is not an available name but a misidentification ('*Pachychaeta* Bezzi 1895 . . . nec

Loew 1845'). *Melanochaeta* Bezzi, 1906 is to be considered as proposed with the type species (and only included species) *Elachiptera aterrima* by original designation.

7. We thoroughly studied all publications of Loew from 1840 to 1845 as to date it remained unclear if Loew (1845) had published his intended generic name *Pachychaeta* Loew, 1845 only in synonymy with *Crassiseta* or if he had published it anywhere before together with one or more nominal species. Loew's complicated German text can be interpreted under both alternatives. Later authors between 1845 and 1961 did not associate any species name with *Pachychaeta* Loew. Kanmiya (1983, p. 85) cited Corti (1909) to have designated *Oscinis cornuta* Fallén as type species, but in Corti's extensive discussion of the taxonomic problems no designation is included. The first author naming *O. cornuta* as the type species was Andersson (1977). His designation was accepted by Nartshuk (1984).

8. Neither version of Bezzi's name could become valid: *Pachychoeta* Bezzi, 1895 is preoccupied by *Pachychoeta* Bigot, 1857 (p. 545) (ASILIDAE) and *Pachychaeta* Bezzi, 1906 is preoccupied by *Pachychaeta* Brauer & von Bergenstamm, 1891 (p. 99 [also 1892, p. 403]) (TACHINIDAE), an unjustified emendation of *Pachycheta* Portschinsky, 1881 (p. 278). This emendation was discussed in detail by O'Hara (2009). Nevertheless the proposal of a new name is justified, though the circumstances for its validation are outlined only in this application. Bezzi (1906) proposed his new genus *Melanochaeta* with an indication, his description of *Pachychoeta* (1885), and by stating *Elachiptera aterrima* Strobl as its type species.

9. Unaware of the new name *Melanochaeta*, Hendel (1907) a year later proposed a second replacement name for *Pachychoeta* Bezzi, 1895 (now cited as the justified emendation *Pachychaeta*), namely *Pachychaetina* Hendel, 1907, again automatically with the type species *Elachiptera aterrima* and its senior synonym *Oscinis capreolus*.

10. *Melanochaeta* Bezzi, 1906 antedates *Oscinella* Becker, 1909. Apart from *Melanochaeta capreolus*, 39 valid species (many unrevised) are currently included in the genus *Melanochaeta*, all without economic importance. All these 39 species are currently separated from species of *Oscinella* Becker by morphological characters. An available genus-group name for this assemblage of species is *Lasiochaeta* Corti, 1909 with its type species *Elachiptera pubescens* Thalhammer, 1898 as published with morphological annotations by Nartshuk & von Tschirnhaus (submitted). The species *Melanochaeta capreolus* was also described as *Oscinella coei* Nartshuk, 1965. The synonymy of both species was established by Nartshuk (1984) with the unexpressed consequence that *Oscinella* became a junior synonym of *Melanochaeta*. The problematic synonymy was indicated for the first time by von Tschirnhaus (1992, p. 482).

11. We propose that, in the interest of nomenclatural stability, the Commission rule to conserve the widely used generic name *Oscinella* Becker, 1909 by a reversal of precedence with *Melanochaeta* Bezzi, 1906 and its objective synonym *Pachychaetina* Hendel, 1907 under Article 23.9.3 of the Code.

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *Oscinella* Becker, 1909 is to be given precedence over the following generic names, whenever it and either of the other two are considered to be synonyms:
  - (a) *Melanochaeta* Bezzi, 1906;
  - (b) *Pachychaetina* Hendel, 1907;

- (2) to place on the Official List of Generic Names in Zoology the following names:
- (a) *Melanochaeta* Bezzi, 1906, with the endorsement that it is not to be given priority over *Oscinella* Becker, 1909 whenever they are considered to be synonyms, as ruled in (1)(a) above;
  - (b) *Pachychaetina* Hendel, 1907, with the endorsement that it is not to be given priority over *Oscinella* Becker, 1909 whenever they are considered to be synonyms, as ruled in (1)(b) above;
- (3) to amend the entry on the Official List of Generic Names in Zoology for the name *Oscinella* Becker, 1909 to record that the correct reference for this name is **Becker, T.** 1909. *Bulletin du Muséum National d'Histoire Naturelle (Paris)*, **15**(3), p. 120, and to add the endorsement that is to be given precedence over *Melanochaeta* Bezzi, 1906 and *Pachychaetina* Hendel, 1907 whenever it and either of the other two are considered to be synonyms as ruled in (1) above.

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